Weiser River Watershed Subbasin Assessment and Total Maximum Daily Loads

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Department of Environmental Quality

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Weiser River Soil Conservation District
Adams Soil Conservation District

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Abbreviations, Acronyms, and Symbols

§303(d)	Refers to section 303 subsection (d) of the Clean Water Act, or a list of impaired water bodies required by this section
§	Section (usually a section of federal or state rules or statutes)
µg/L	micrograms per liter
Ag Plan	Idaho Agricultural Pollution Abatement Plan
BMP	best management practice
BOR	United States Bureau of Reclamation
BURP	Beneficial Use Reconnaissance Program
C	Celsius
CFR	Code of Federal Regulations (refers to citations in the federal administrative rules)
cfs	cubic feet per second
cfu	colony forming units
CWA	Clean Water Act
DEQ	Department of Environmental Quality
EPA	United States Environmental Protection Agency
E. coli	*Escherichia coli*
EPT	Ephemeroptera, Plecoptera and Trichoptera
F	Fahrenheit
HUC	Hydrologic Unit Code
IDAPA	Refers to citations of Idaho administrative rules
j/m^2/s	Joules/meter^2/second
kg/day	kilograms per day
km	kilometer
km^2	square kilometer
LA	load allocation
LC	load capacity
mg/L	milligrams per liter
mm	millimeter
MOS	margin of safety
mpn	most probable number
NA	not applicable
NB	natural background
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSMP	nonpoint source management plan

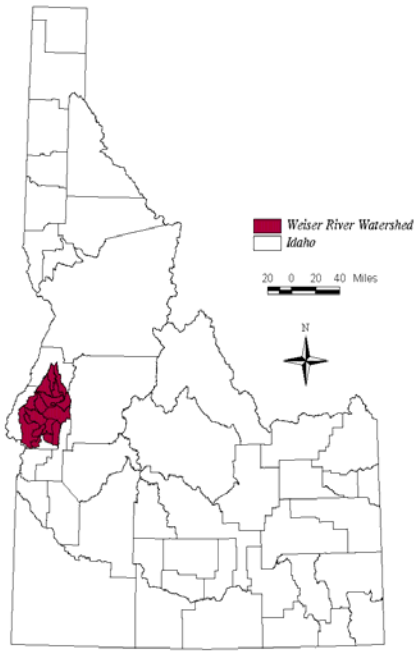
NTU	nephelometric turbidity unit
RDI	DEQ's river diatom index
RFI	DEQ's river fish index
RMI	DEQ's river macroinvertebrate index
RPI	DEQ's river physiochemical index
SBA	subbasin assessment
SCD	Soil Conservation District
SFI	DEQ's stream fish index
SHI	DEQ's stream habitat index
SMI	DEQ's stream macroinvertebrate index
SSC	suspended sediment concentration
SSTEMP	Stream Segment Temperature Model
TMDL	total maximum daily load
TSS	total suspended solids
U.S.	United States
U.S.C.	United States Code
USGS	United States Geological Survey
WAG	Watershed Advisory Group
WLA	waste load allocation
WQLS	water quality limited segment
WQS	water quality standard(s)
WWTP	wastewater treatment plant

Executive Summary

The federal Clean Water Act requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes, pursuant to Section 303 of the Clean Water Act, are to adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the waters whenever possible. Section 303(d) of the Clean Water Act establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list of impaired waters, currently every two years. For waters identified on this list, states and tribes must develop a total maximum daily load (TMDL) for the pollutants, set at a level to achieve water quality standards. This document addresses the water bodies in the Weiser River Watershed that have been placed on what is known as the "§303(d) list."

This subbasin assessment and total maximum daily load analysis has been developed to comply with Idaho's total maximum daily load schedule. This assessment describes the physical, biological, and cultural setting; water quality status; pollutant sources; and recent pollution control actions in the Weiser River Watershed located in southwestern Idaho. The first part of this document, the subbasin assessment, is an important first step in leading to the total maximum daily load. The starting point for this assessment was Idaho's current §303(d) list of water quality limited water bodies. Twelve segments of the Weiser River Watershed were listed on this list. The subbasin assessment portion of this document examines the current status of §303(d) listed waters and defines the extent of impairment and causes of water quality limitation throughout the subbasin. The loading analysis quantifies pollutant sources and allocates responsibility for load reductions needed to return listed waters to a condition of meeting water quality standards.

Subbasin at a Glance



Weiser River Watershed	
HUC:	17050124
Water Bodies:	Weiser River (3 Segments), West Fork Weiser River, Mann Creek, Cove Creek Crane Creek, Little Weiser River, Johnson Creek, North Crane Creek, South Crane Creek, and Crane Creek Reservoir
Pollutant Sources:	Point and Nonpoint Sources
Ecoregions:	Snake River-High Desert Blue Mountains
Size:	1,079,148 Acres

Figure A. Weiser River Watershed Vicinity Map.

The Weiser River Watershed, hydrologic unit code 17050124, encompasses a large area in southwestern Idaho (Figure A). The headwaters for the Weiser River originate in the southern end of the Seven Devil Mountain Range and the west central mountains of Idaho. The watershed size is 1,079,148 acres solely within the state of Idaho. There are no tribal lands within the watershed and the only interstate water is the Snake River, which the Weiser River discharges to.

Land uses in the Weiser River Watershed consist of dry land agriculture, irrigated agriculture, rangeland, forest, and riparian or open water. Land ownership is a mix of private holdings, federally managed lands, and state-managed lands. A majority of the population is associated with small homesteads scattered throughout the watershed. The municipalities of Weiser, Midvale, Cambridge, and Council are the only recognized urban areas in the watershed.

Overall, there are twelve water quality limited segments within the Weiser River Watershed that were placed on the Idaho 1998 §303(d) list:

- One segment is a reservoir: Crane Creek Reservoir. Action on Crane Creek Reservoir will be delayed until 2007 to allow further study and to assess the status and appropriateness of designated uses.
- Three segments of the Weiser River were listed on the Idaho 1998 §303(d) list.
- The remaining water bodies are tributaries to the Weiser River or Crane Creek Reservoir.

Information about these segments is provided in Figure B and Tables A and B:

- Figure B shows the Idaho 1998 §303(d) listed segments in the Weiser River Watershed.
- Table A details each listed segment's impaired uses and pollutant(s) of concern. Each segment will be addressed separately in this executive summary.
- Table B shows a breakdown of the findings in the subbasin assessment and actions to be taken (i.e., delist, list, or develop a total maximum daily load).

Sediment, bacteria, flow alteration, nutrients, and temperature are the listed pollutants of concern. It is through the subbasin assessment process that the segments and any available data are analyzed to determine the support status of the beneficial uses in the segment. These uses include cold water aquatic life, primary or secondary contact recreation, salmonid spawning, water supply, wildlife, and aesthetics.

Those water bodies determined to be not fully supporting their designated or existing beneficial uses and not meeting applicable water quality standards are required to have a total maximum daily load developed. For the Weiser River Watershed, five segments were determined not to be supporting the designated or existing beneficial use. Three segments were determined to be intermittent water bodies, two were determined to be fully supporting designated or existing uses, and the remaining two require further verification. Support status was determined by comparing water quality data to Idaho water quality criteria and assessing biological information.

Total maximum daily loads were developed to address sediment, bacteria, and temperature in the Weiser River Watershed. Additionally, total phosphorus load allocations have been established based on load allocations set in the *Snake River-Hells Canyon Subbasin Assessment and Total Maximum Daily Load* (Idaho DEQ and Oregon DEQ 2004).

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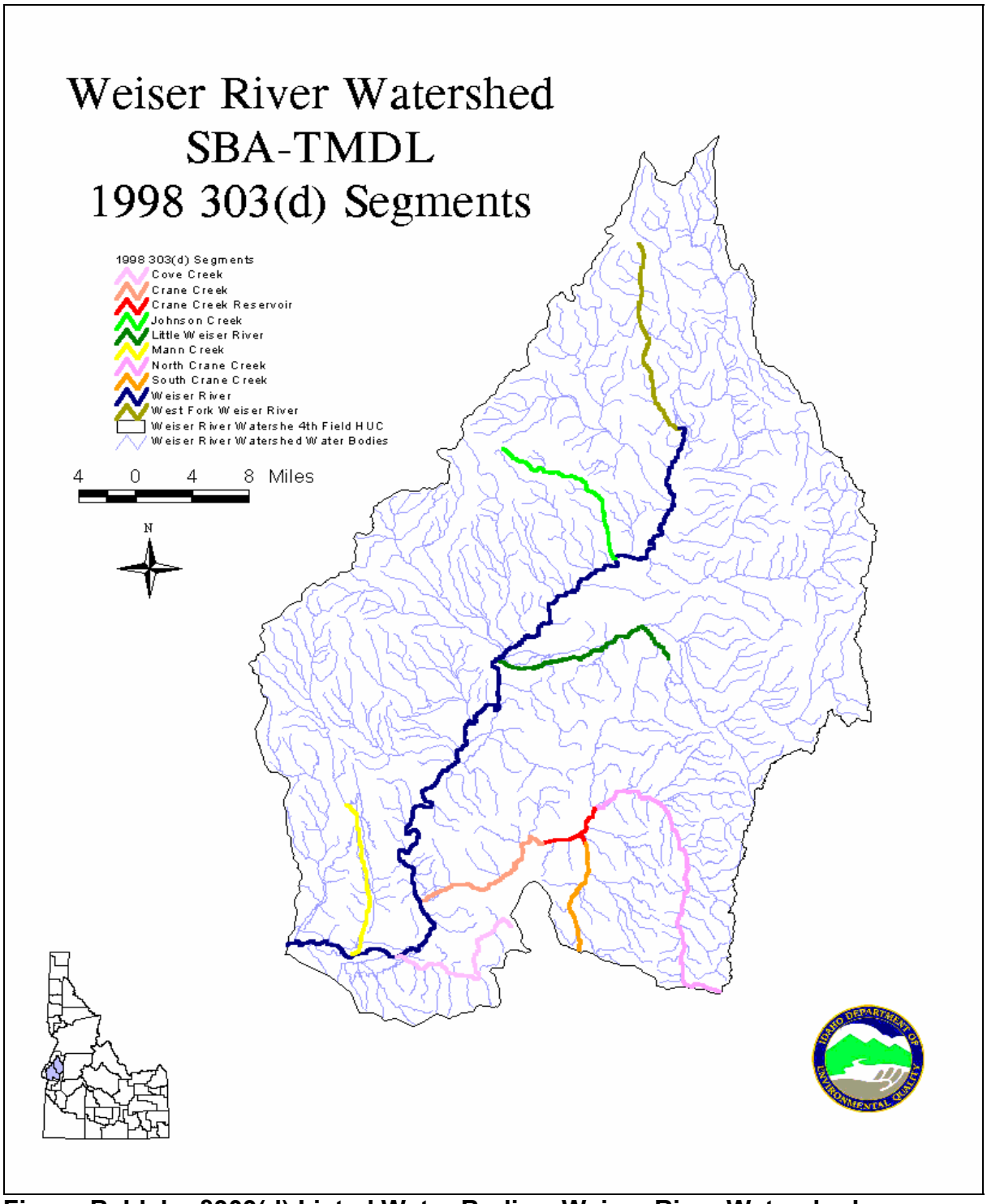

Figure B. Idaho §303(d) Listed Water Bodies. Weiser River Watershed.

Table A. Idaho 1998 §303(d) Listed Segments. Weiser River Watershed.

Stream	Boundary	Listed Pollutants
Weiser River	Galloway Dam to Snake River	Nutrients, Sediment, Bacteria, Dissolved Oxygen, and Temperature
Weiser River	Little Weiser River to Galloway Dam	Nutrients, Bacteria, and Sediment
Weiser River	West Fork Weiser River to Little Weiser River	Nutrients and Sediment
Mann Creek	Mann Creek Reservoir to Weiser River	Sediment
Cove Creek	Headwaters to Weiser River	Nutrients and Sediment
Crane Creek	Crane Creek Reservoir to Weiser River	Bacteria, Nutrients, and Sediment
Little Weiser River	Indian Valley to Weiser River	Nutrients and Sediment
Johnson Creek	Headwaters to Weiser River	Unknown
West Fork Weiser River	Headwaters to Weiser River	Unknown
North Crane Creek	Headwaters to Crane Creek Reservoir	Bacteria, Flow, Nutrients, Sediment, and Temperature
South Crane Creek	Headwaters to Crane Creek Reservoir	Unknown
Crane Creek Reservoir	Reservoir	Nutrients and Sediment

Table B. Summary of Assessment Outcomes. Weiser River Watershed.

Water Body[a]	Assessment Unit (HUC 17050124)	TMDLs/ Allocations Completed	Recommended Changes to §303(d) List	Recommended Schedule Changes	Justification
Weiser River, (Galloway Dam to Snake River)	SW001_05	Sediment Bacteria *Total Phosphorus*[a] **PNV temperature**	Remove Dissolved Oxygen and Nutrients as Pollutants of Concern		Diel monitoring conducted did not indicate exceedence of dissolved oxygen criteria. Nuisance aquatic growth not detected by dissolved oxygen.
Weiser River, (Little Weiser River to Galloway Dam)	SW001_05 SW007_05	Sediment *Total Phosphorus* **PNV temperature**	Remove Bacteria and Nutrients as Pollutants of Concern.		Nuisance aquatic growth not detected by dissolved oxygen monitoring. Geo-metric mean bacteria count did not exceed criteria.
Weiser River, (West Fork Weiser River to Little Weiser River)	SW007_05	**PNV temperature**			Other parameters Full Support per *Water Body Assessment Guidance*
Mann Creek, (Mann Creek Reservoir to Weiser River)	SW030_03	**PNV temperature**			Other parameters Full Support per *Water Body Assessment Guidance*
Cove Creek, (Headwaters to Weiser River)	SW002_02		Remove Segment from §303(d) List		Intermittent Water Body
Crane Creek, (Crane Creek Reservoir to Weiser River)	SW003_05	Sediment Bacteria *Total Phosphorus* **PNV temperature**	Remove Nutrients as Pollutant of Concern		
Little Weiser River, (Indian Valley to Weiser River)	SW008_03 SW008_04	Bacteria Sediment *Total Phosphorus* **PNV temperature**	Remove Nutrients as Pollutant of Concern Add Bacteria as a Pollutant of Concern		
Johnson Creek, (Headwaters to Weiser River)	SW022_02 SW022_03		Remove Segment from §303(d) List		Other parameters Full Support per *Water Body Assessment Guidance*
West Fork Weiser River (Headwaters to Weiser River)	SW017_02 SW017_03	**PNV temperature**			Other parameters Full Support per *Water Body Assessment Guidance*
North Crane Cr., (Headwaters to Crane Creek Res.)	SW006_02 SW006_03 SW006_04	**PNV temperature**			Other parameters Full Support per *Water Body Assessment Guidance*
South Crane Cr., (Headwaters to Crane Creek Res.)	SW005_02		Remove Segment from §303(d) List		Intermittent Water Body
Crane Creek Reservoir	SW004_04 SW004L_04L	Total Phosphorus Sediment		Delay action until 2007	Additional study of reservoir water quality and assessment of designated uses

a Indicates total phosphorus allocations developed

PNV temperature – See Potential Natural Vegetation (PNV) temperature TMDLs in the addendum.

Key Findings

Each 1998 §303(d) listed water body will be addressed separately. Pollutants of concerned are discussed within the summary, with additional data and information provided in Section 2. Recommendations are provided along with the rationale for those recommendations.

Weiser River, Galloway Dam to Snake River

Water Body	Weiser River, Galloway Dam to Snake River
Miles of impaired water body	12.4
Listed pollutants	Sediment, Temperature, Bacteria, Dissolved Oxygen, and Nutrients
Impaired designated uses	Cold water aquatic life and primary contact recreation
TMDL/Allocations goals	Nutrients: total phosphorus allocations as established in Snake River-Hells Canyon TMDL Sediment: targets set at literature values for the full support of cold water aquatic life Bacteria: state of Idaho water quality criteria Temperature: state of Idaho water quality criteria (PNV temperature TMDL, see addendum)
Further listing recommendations	Remove dissolved oxygen and nutrients as pollutants of concern
Potential sources	Stream bank erosion, overland flow, animal feeding operations, wildlife, tributary inflows, and solar radiation

Biological assessment was completed on the lower Weiser River per *Idaho Water Body Assessment Guidance* (Grafe et al. 2002), and the results of this assessment indicate the following:

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- The River Fish Index score was "below minimal threshold," indicating the segment is not supporting the cold water aquatic life designated use.
- Bacteria (*Escherichia coli* [*E. coli*]) monitoring conducted in 2001 and 2002 showed exceedances of Idaho water quality geometric mean criteria, indicating primary contact recreation is not fully supported.
- Water temperatures showed exceedances of Idaho water quality criteria for maximum daily average temperature and daily average temperature.
- Diel dissolved oxygen concentrations were examined and showed that dissolved oxygen concentrations do not fall below Idaho water quality criteria in the lower Weiser River.

The biological assessment also indicated a high presence of sediment tolerant species. Analysis of macroinvertebrate and periphyton species indicated that sediment is impairing the composition and diversity of the indicator species present in the lower Weiser River. A total maximum daily load for total suspended solids and a substrate target have been established to protect designated beneficial uses:

- A total suspended solid target of a 50 milligrams per liter (mg/L) monthly average will need to be met to protect the designated beneficial uses. A load reduction for total suspended solids will require an overall reduction of 8-11% during high loading periods.
- Additionally, a substrate target of no more than 30% of the substrate as fine sediment (<6 millimeters [mm]) has been established.

A bacteria load for E. coli has been established to achieve full support for primary and secondary contact recreation. A reduction of approximately 90% will be required to meet Idaho water quality criteria for supporting primary and secondary contact recreation.

The *Snake River-Hells Canyon Subbasin Assessment and Total Maximum Daily Load* (Idaho DEQ and Oregon DEQ 2004) placed a total phosphorus concentration target/allocation on the Weiser River and other tributaries that discharge to the Snake River from southwestern Idaho and eastern Oregon. Water quality data for the lower Weiser River showed that the May through September total phosphorus load would need to be reduced by 28-69% to reach the total phosphorus target/allocation set for the Weiser River.

Weiser River, Little Weiser River to Galloway Dam

Water Body	**Weiser River, Little Weiser River to Galloway Dam**
Miles of impaired water body	20.9
Listed pollutants	Sediment, bacteria, and nutrients
Impaired designated uses	Cold water aquatic life and primary contact recreation
TMDL/Allocation goals	Nutrients: total phosphorus allocations as established in the downstream segment and Snake River-Hells Canyon TMDL Sediment: targets set at literature values for the full support of cold water aquatic life Temperature: PNV temperature TMDL (see addendum)
Further listing recommendations	Remove bacteria and nutrients as pollutants of concern
Potential sources	Stream bank erosion, overland flow, and tributary inflows

A biological assessment was completed on the middle Weiser River per *Idaho Water Body Assessment Guidance* (Grafe et al. 2002), and the results of this assessment indicated the following:

- The *River Fish Index* score was "below minimal threshold," indicating the segment is not supporting the cold water aquatic life designated use or salmonid spawning.
- Bacteria monitoring conducted in 2001 and 2002 showed Idaho water quality geometric mean criteria were not exceeded, indicating primary contact recreation is fully supported.
- Water temperatures showed exceedances of Idaho water quality criteria for maximum daily average temperature and daily average temperature; this is a major influence on downstream water temperatures.

The biological assessment also indicated a high presence of sediment tolerant species. Analysis of macroinvertebrate and periphyton species indicated that sediment is impairing the composition and diversity of the indicator species present in the middle Weiser River. Consequently, a total maximum daily load for total suspended solids and a substrate target have been established to protect designated beneficial uses:

- A total suspended solid target of 50 mg/L monthly average will need to be met to protect the designated beneficial uses. A load reduction for total suspended solids will require an overall reduction of 11-45% during high loading periods.
- A substrate target of no more than 30% of the substrate as fine sediment (<6 mm) has also been established.

The *Snake River-Hells Canyon Subbasin Assessment and Total Maximum Daily Load* (Idaho DEQ and Oregon DEQ 2004) placed a total phosphorus concentration target/allocation on the Weiser River. To meet the goals established for the lower Weiser River, total phosphorus reductions from the middle Weiser River and its tributaries need to occur as well. Water quality data for the middle Weiser River showed that the May through September total phosphorus load would need to be reduced by 21-89% to reach the total phosphorus target/allocations set for the lower Weiser River.

See the Addendum to the Weiser River Subbasin Assessment and TMDL for information about the Potential Natural Vegetation (PNV) temperature TMDL.

Weiser River, West Fork Weiser River to Little Weiser River

Water Body	Weiser River, West Fork Weiser River to Little Weiser River
Miles of impaired water body	31.5
Listed pollutants	Sediment and nutrients
Impaired designated uses	No impairment to designated uses from listed pollutants
TMDL goal	Temperature: PNV temperature TMDL (see addendum)
Further listing recommendations	Remove from §303(d) list for listed pollutants
Potential sources	Not applicable

A biological assessment was completed on the upper Weiser River per *Idaho Water Body Assessment Guidance* (Grafe et al. 2002). The overall "Condition Rating" for the upper Weiser River segment indicates the segment is fully supporting cold water aquatic life. Neither a nutrient nor a sediment total maximum daily load nor allocations are required. Total phosphorus concentrations are well below the target concentration in the middle-lower Weiser River segments and the target for the Snake River. The upper Weiser River segment is the only segment with permitted point source discharges. Waste load allocations for these permitted facilities will be established based on their current permitted discharge levels. Additional bacteria monitoring showed no exceedence of the geometric mean criteria and primary contact recreation is fully supported.

See the Addendum to the Weiser River Subbasin Assessment and TMDL for information about the Potential Natural Vegetation (PNV) temperature TMDL.

Mann Creek, Mann Creek Reservoir to Weiser River

Water Body	Mann Creek, Mann Creek Reservoir to Weiser River
Miles of impaired water body	13.0
Listed pollutants	Sediment
Impaired designated uses	No impairment to designated uses from listed pollutants
TMDL goal	Temperature: PNV temperature TMDL (see addendum)
Further listing recommendations	Remove from §303(d) list for listed pollutant
Potential sources	Not applicable

A biological assessment was completed on Mann Creek per *Idaho Water Body Assessment Guidance* (Grafe et al. 2002), and the overall "Condition Rating" for Mann Creek indicated the segment is fully supporting cold water aquatic life and salmonid

spawning. However, Mann Creek is a significant source of total phosphorus and sediment to the lower Weiser River. Further assessment and allocations for tributaries to the lower Weiser River will be required to target critical areas of concern. The final loading analysis completed in the subbasin assessment will assist in identifying critical periods and areas of concern.

See the Addendum to the Weiser River Subbasin Assessment and TMDL for information about the Potential Natural Vegetation (PNV) temperature TMDL.

Cove Creek, Headwaters to Weiser River

Water Body	**Cove Creek Headwaters to Weiser River**
Miles of impaired water body	14.0
Listed pollutants	Sediment and nutrients
Impaired designated uses	Intermittent water body; no designated uses
TMDL goal	No TMDL required, intermittent water body
Further listing recommendations	Remove water body from §303(d) list
Potential Sources	Not applicable

Cove Creek has been determined to be an intermittent water body, so Idaho water quality standards and criteria for intermittent water bodies apply.

Cove Creek is a source of total phosphorus and sediment to the lower Weiser River. Further assessment and allocations for lower Weiser River tributaries will be required to target critical periods and areas of concern. The final loading analysis completed in the subbasin assessment will assist in identifying these critical periods and areas of concern.

Crane Creek, Crane Creek Reservoir to Weiser River

Water Body	Crane Creek, Crane Creek Reservoir to Weiser River
Miles of impaired water body	12.6
Listed pollutants	Sediment, bacteria, and nutrients
Impaired designated uses	Cold water aquatic life and primary contact recreation
TMDL/Allocation goals	Nutrients: total phosphorus allocations as established in middle and lower Weiser River Sediment: targets set at literature values for the full support of cold water aquatic life Bacteria: State of Idaho water quality criteria Temperature: PNV temperature TMDL (see addendum)
Further listing recommendations	Remove nutrients as a pollutant of concern
Potential Sources	Stream bank erosion, overland flow, and Crane Creek Reservoir

A biological assessment was completed on Crane Creek per *Idaho Water Body Assessment Guidance* (Grafe et al. 2002), and the results of this assessment indicate the following:

- The River Macroinvertebrate Score was "below minimal threshold" indicating the segment is not supporting the cold water aquatic life designated use.
- Bacteria monitoring conducted in 2003 showed exceedances of Idaho water quality criteria (geometric mean) indicating primary contact recreation is not fully supported.
- The biological assessment also indicated a high presence of sediment tolerant species. An analysis of macroinvertebrate and periphyton species indicated that sediment is impairing the composition and diversity of the indicator species present in Crane Creek.
- Total suspended solid data indicated no exceedances of the 50 mg/L recommended criteria for the protection of cold water aquatic life. In lieu of a water column sediment target, a substrate percent fines target has been established as a surrogate measure. This target is no greater than 30% fines 6 mm or smaller.
- A bacteria load for *E. coli* has been established to achieve full support for primary and secondary contact recreation. A reduction of approximately 83% will be required to meet Idaho water quality criteria for supporting primary and secondary contact recreation.
- To meet the target/allocation established for the lower Weiser River, a total phosphorus reduction from the Crane Creek needs to occur. Water quality data for Crane Creek showed that the May through September total phosphorus load would need to be reduced by 64-73% to reach the total phosphorus target for the lower Weiser River.
- See the Addendum to the Weiser River Subbasin Assessment and TMDL for information about the Potential Natural Vegetation (PNV) temperature TMDL.

Little Weiser River, Indian Valley to Weiser River

Water Body	Little Weiser River, Indian Valley to Weiser River
Miles of impaired water body	17.3
Listed pollutants	Sediment and nutrients
Impaired designated uses	Cold water aquatic life and primary contact recreation
TMDL/Allocation goals	Nutrients: total phosphorus allocations as established in middle and lower Weiser River Sediment: targets set at literature values for the full support of cold water aquatic life Bacteria: State of Idaho water quality criteria Temperature: PNV temperature TMDL (see addendum)
Further listing recommendations	Remove nutrients as a pollutant of concern Add bacteria as a pollutant of concern
Potential Sources	Stream bank erosion and overland flow

A biological assessment was completed on the Little Weiser River per *Idaho Water Body Assessment Guidance* (Grafe et al. 2002), and the results of this assessment indicate the following:

- The BURP scores at two sites were "not full support".
- The biological assessment also indicated a high presence of sediment tolerant species. An analysis of macroinvertebrate and periphyton species indicated that sediment is impairing the composition and diversity of the indicator species present in the Little Weiser River.
- Total suspended solid data indicated no exceedances of the 50 mg/L recommended criteria for the protection of cold water aquatic life. In lieu of a water column sediment target, a substrate percent fines target has been established as a surrogate measure. This target is no greater than 30% fines 6 mm or smaller.
- In 2002, routine monitoring showed an exceedence of the single sample criteria for *E. coli*. Additional sampling showed exceedances of Idaho water quality criteria (geometric mean), indicating primary contact recreation is not fully supported.
- To meet the goals established for the lower Weiser River, a total phosphorus reduction from the Little Weiser River may need to occur during the months of May and June. Although a specific allocation has not been established for the water body, a loading analysis has been completed. Further monitoring will be required to determine the proportions of reductions that may need to occur.
- See the Addendum to the Weiser River Subbasin Assessment and TMDL for information about the Potential Natural Vegetation (PNV) temperature TMDL.

The preliminary biological assessment also indicated a high presence of sediment tolerant species. Total suspended solid data indicated no exceedances of the 50 mg/L recommended criteria for the protection of cold water aquatic life. In lieu of a water column sediment target, a substrate percent fines target has been established as a surrogate measure. This target is no greater than 30% fines 6 mm or smaller. A bacteria

load for *E. coli* has been established to achieve full support for primary and secondary contact recreation. A reduction of approximately 81% will be required to meet Idaho water quality criteria for supporting primary and secondary contact recreation.

Johnson Creek, Headwaters to Weiser River

Water Body	**Johnson Creek, Headwaters to Weiser River**
Miles of Impaired Water Body	13.7
Listed Pollutants	Unknown
Impaired Designated Uses	No impairment to designated uses
TMDL Goal	No TMDL required
Further listing recommendations	Remove water body from §303(d) list
Potential Sources	Not applicable

A biological assessment was completed on Johnson Creek per *Idaho Water Body Assessment Guidance* (Grafe et al. 2002). The overall "Condition Rating" for Johnson Creek indicated the segment is fully supporting cold water aquatic life and salmonid spawning.

West Fork Weiser River, Headwaters to Weiser River

Water Body	**West Fork Weiser River, Headwaters to Weiser River**
Miles of impaired water body	15.9
Listed pollutants	Unknown
Impaired designated uses	Further verification of biological assessment required
TMDL goal	Temperature: PNV temperature TMDL (see addendum)
Further listing recommendations	Remove from §303(d)list for listed pollutants
Potential sources	Not applicable

A biological assessment was completed on the West Fork Weiser River per *Idaho Water Body Assessment Guidance* (Grafe et al. 2002). In 2002, Beneficial Use Reconnaissance Program monitoring was conducted. The results from that monitoring indicate this stream segment is fully supporting its all of its beneficial uses. See the Addendum to the Weiser River Subbasin Assessment and TMDL for information about the Potential Natural Vegetation (PNV) temperature TMDL.

North Crane Creek, Headwaters to Crane Creek Reservoir

Water Body	North Crane Creek Headwaters to Crane Creek Reservoir
Miles of impaired water body	24.7
Listed pollutants	Sediment, Temperature, Bacteria, Nutrients, and Flow
Impaired designated uses	Intermittent water body; no designated uses
TMDL goal	Temperature: PNV temperature TMDL (see addendum)
Further listing recommendations	Remove from §303(d) list for listed pollutants
Potential sources	Not applicable

North Crane Creek has been determined to be an intermittent water body. State of Idaho water quality standards and criteria for intermittent water bodies apply. North Crane Creek may be a source of total phosphorus and sediment to Crane Creek Reservoir. Further assessments and allocations for tributaries will be required to target critical periods and areas of concern for the reservoir. The final loading analysis completed in the subbasin assessment will assist in identifying these critical periods and areas of concern in North Crane Creek. Assessment of *E. coli* bacteria in 2003 showed that during a period of minimum discharge conditions, North Crane Creek is fully supporting primary and secondary contact recreation. See the Addendum to the Weiser River Subbasin Assessment and TMDL for information about the Potential Natural Vegetation (PNV) temperature TMDL.

South Crane Creek, Headwaters to Crane Creek Reservoir

Water Body	South Crane Creek Headwaters to Crane Creek Reservoir
Miles of impaired water body	9.2
Listed pollutants	Unknown
Impaired designated uses	Intermittent water body; no designated uses
TMDL goal	No TMDL required, intermittent water body
Further listing recommendations	Remove from §303(d) list as a intermittent water body
Potential sources	Not applicable

South Crane Creek has been determined to be an intermittent water body. State of Idaho water quality standards and criteria for intermittent water bodies apply. South Crane Creek may be a source of total phosphorus and sediment to Crane Creek Reservoir.

Further assessments and allocations for tributaries will be required to target critical periods and areas of concern for the reservoir. The final loading analysis completed in the subbasin assessment will assist in identifying these critical periods and areas of concern in North Crane Creek.

Crane Creek Reservoir

Water Body	Crane Creek Reservoir
Miles of impaired water body	Reservoir, 1,507 acres
Listed pollutants	Sediment and Nutrients
Impaired designated uses	Cold water aquatic life
TMDL/Allocation goal	Action on Crane Creek Reservoir will be delayed until 2007 to allow further study and assess the status and appropriateness of designated uses.
Further listing recommendations	No changes recommended
Potential sources	In-reservoir conditions

Action on Crane Creek Reservoir will be delayed until 2007 to allow further study and assess the status and appropriateness of designated uses.

Proposed Listing on Next Idaho §303(d) list

During the development of the Weiser River Watershed subbasin assessment, biological assessments and the analysis of available data have indicated that some water bodies are in full support of designated or existing beneficial uses. In other cases, it was determined that water bodies were not supporting designated or existing beneficial uses, but certain pollutants of concern were not the sources of impairment as presented in the 1998 §303(d) list. In addition, it was determined, in some cases, that additional pollutants of concern should be added as impairing a water body's designated or existing uses. Table C presents the recommendations for changes to future Idaho §303(d) lists.

Table C. §303(d) Delisting and Additional Listing Recommendations and Overview. Weiser River Watershed.

Water Body	Proposed Recommendation	Justification for Recommendation
Weiser River, (Galloway Dam to Snake River)	Remove nutrients and dissolved oxygen	Diel monitoring showed no exceedence of water quality criteria for dissolved oxygen; dissolved oxygen levels did not indicate nuisance aquatic growth
Weiser River, (Little Weiser River to Galloway Dam)	Remove bacteria and nutrients; add temperature	Dissolved oxygen levels did not indicate nuisance aquatic growth, water column temperature monitoring showed exceedances of water quality criteria for support of cold water aquatic life
Weiser River, (West Fork Weiser River to Little Weiser River)	Delist segment	*Water Body Assessment Guidance* indicated *Full Support*
Mann Creek, (Mann Creek Reservoir to Weiser River)	Delist segment	*Water Body Assessment Guidance* indicated *Full Support*
Cove Creek, (Headwaters to Weiser River)	Delist segment	Apply intermittent water body standards and criteria
Crane Creek, (Crane Creek Reservoir to Weiser River)	Remove nutrients	Dissolved oxygen levels did not indicate nuisance aquatic growth
Little Weiser River, (Indian Valley to Weiser River)	Remove nutrients; add bacteria	Dissolved oxygen levels did not indicate nuisance aquatic growth, bacteria monitoring showed exceedances of water quality criteria for support of contact recreation
Johnson Creek, (Headwaters to Weiser River)	Delist segment	*Water Body Assessment Guidance* indicated *Full Support*
West Fork Weiser River, (Headwaters to Weiser River)	Delist segment	*Water Body Assessment Guidance* indicated *Full Support*
North Crane Creek, (Headwaters to Crane Creek Res.)	Delist segment	Apply intermittent water body standards and criteria
South Crane Creek, (Headwaters to Crane Creek Res.)	Delist segment	Apply intermittent water body standards and criteria
Crane Creek Reservoir	Further study	Recommend limnology study to determine pollutant sources and use attainability analysis to determine appropriate uses

Timeframe for Meeting Water Quality Standards

The development of an implementation plan can be completed in a timely manner. However, implementation of best management practices may take years and is dependent on available resources, funding, and prioritization by land management agencies. A long-term monitoring plan will be developed to determine if the total maximum daily loads need to be refined and to assure that goals and targets of the total maximum daily loads are being achieved.

Some biological indicators may respond quickly to reduced sediment input and habitat improvement. Warm water intolerant species may take longer and may not re-establish until benefits from reduced solar radiation and increased ground water effectively cool the water.

Implementation Strategy

The implementation strategy addresses the cursory development of an implementation plan for the Weiser River Watershed. State and federal agencies and the public will assist in implementing best management practices to achieve the targets and goals identified. The agencies that will be involved are the United States Forest Service, Bureau of Land Management, Natural Resources Conservation Service, Idaho Soil Conservation Commission, and the Department of Environmental Quality.

As with any implementation plan addressing nonpoint sources, an adaptive management approach will be a critical component of any implementation plan developed for the watershed. As more data are collected, future modifications to the load allocation may occur, which will include more accurate water body sediment loading information and a better determination of appropriate existing uses. Although their use is not anticipated, possible regulatory strategies are in place and can be applied through current regulatory authority.

Much of the implementation of best management practices will be dependent on the availability of funding and personnel resources. Current state and federal cost share programs will assist private landowners in addressing load allocations on private holdings. It is expected that the identified state and federal agencies will work closely with the Department of Environmental Quality during all phases of best management practices implementation and best management practices effectiveness evaluation.

Monitoring the target pollutants in the total maximum daily load needs to be conducted to determine

1) if the overall goal of achieving and maintaining compliance with state water quality standards is being meet,
2) if the implemented best management practices are working as designed or if modification needs to occur,
3) if load allocations need to be adjusted, and

4) if best management practices are being implemented in a timely manner to address water quality concerns.

Identified Data Gaps

Through the Weiser River Watershed assessment process, two major data gaps were identified:

- The first data gap is the total suspended solids results and the comparison to the suspended sediment concentration. It is recognized the use of total suspended solids may underestimate the true amount of larger particles. This is especially true during the high discharge period of March through May, a critical period for sediment loading in the Weiser River Watershed.

- The second major data gap pertains to Crane Creek Reservoir. High turbidity levels and total phosphorus concentrations are believed to be associated with internal sources and not external sources. Further analysis of limnology conditions is required to determine if the sources of those parameters are anthropogenic.

Public Involvement

The Weiser River Watershed Advisory Group (WAG) was formed in 1998 to assist the Department of Environmental Quality in developing the *Weiser River Watershed Subbasin Assessment and Total Maximum Daily Load*. The Weiser River Watershed Advisory Group was briefed on ongoing and future monitoring that would occur to fill identified data gaps in the watershed.

Additional information was provided to the Weiser River Watershed Advisory Group as follows:

- In March 2003, the Weiser River Watershed Advisory Group was presented the basic approach to developing the *Weiser River Watershed Subbasin Assessment and Total Maximum Daily Loads*. This document provided the overall assessment process to be used in identifying impaired designated or existing uses, along with the approach to be used in determining if the listed pollutants of concern were impairing those uses.

- In July, August, October and November 2003, meetings were held to discuss the *Weiser River Watershed Subbasin Assessment and Total Maximum Daily Load* Technical Review Document (submitted to the Watershed Advisory Group on October 16, 2003). Alternative approaches to temperature TMDLs were discussed.

- With the WAG's approval, the document was sent out for public comment from August 9th through September 24th 2004. This version contained an approach to the temperature issue which mirrored the approach used in the Snake River Hells Canyon TMDL which had previously been approved by the EPA. However, upon further review of the document it was discovered that while this approach was satisfactory for use with the bi-state TMDL between Oregon and Idaho, that it could not be used within the State of Idaho.

- DEQ prepared a draft Potential Natural Vegetation Temperature TMDL for the Weiser River watershed. The draft was presented to the WAG on November 18, 2005.

- In the WAG meeting on February 15, 2006, the group voted unanimously to accept the Potential Natural Vegetation Temperature TMDL and send it out for public comment. They also reaffirmed their acceptance of the original document (with the temperature TMDL revisions).

- Copies of the draft assessment were made available for review at DEQ's Boise Regional Office; the public libraries in Weiser and Boise, Idaho; Washington County Courthouse in Weiser and the Adams County Courthouse in Council; and in PDF format on DEQ's Web site starting Monday, March 13th, 2006. Public comments on the proposed actions were accepted through 5 p.m., Friday, April 14th, 2006.

- The only comments received were from the U.S. Environmental Protection Agency. The response to those comments is included in the Potential Natural Vegetation TMDL Addendum.

- In the WAG meeting on June 22, 2006, the group voted unanimously to accept the Potential Natural Vegetation Temperature TMDL as amended with the inclusion of comments received from the EPA. They also reaffirmed their acceptance of the original document (with the temperature TMDL revisions).